



CITY OF LODI COUNCIL COMMUNICATION

AGENDA TITLE: Approve Request for Proposal for Power Systems Studies on the Existing **12kV** Electric Distribution Systems, **Four** Substations, and **60kV** Transmission Lines (EUD)

MEETING DATE: August **6,2008**

PREPARED BY: Electric Utility Director

RECOMMENDED ACTION: Approve request for proposal to perform various specialized power systems analyses on the City's existing 12kV electric distribution systems, four (4) substation facilities, and the 60kV transmission lines.

BACKGROUND INFORMATION: Growth within the City between the year 2001 and 2006 increased significantly the electrical loads being served by the existing electric distribution system. The summer peak load in 2001 was approximately 120MW. In 2006, load crested to a new high of approximately 148MW during the summer season (that is, without the General Mills CoGen supplying approximately 3.1MW to the City's electric distribution system).

Standard power utility practices dictate the performance of comprehensive and detailed power system analyses and evaluation of the existing facilities/systems regularly (every two to three years). This is to verify and confirm that existing limits, as well as various electric distribution, substation and transmission components, are within the safe operational limits to **serve** electrical loads. Continued checks and adjustments enhance the reliability and the security of continuous power service to the customer and minimize prolonged power outages. The last comprehensive power system study for the City's power grid was conducted in 2001. It needs to be updated.

The request for proposal will cover the power system studies of the City's existing 12kV electric distribution system, four (4) substation facilities (Henning, Industrial, Killelea and McLane), and the 60kV transmission lines including the interconnection with PG&E. This task will be executed using ASPEN Software and will include the following:

1. Database creation, setup, configuration, parameter and data entries
2. Short circuit studies for at least the three-phase fault and line-to-ground fault
3. Protective relay coordination from the 60kV to the smallest fuse installed in both overhead and underground distribution system at the 480-volt system
4. Update protective device library to include all devices installed and being used throughout the City's power grid
5. Establish and standardize relay settings, fuse sizes, circuit breaker sizes and reclosers including 12kV reclosing strategy at different fault conditions
6. Voltage drop study, voltage profile and voltage support analysis for each of the more heavily loaded 12kV feeders and substation transformers
7. Evaluate the effectiveness of existing line capacitors and confirm the correct capacitor placement in the electric distribution system
8. Determine strategic location and placement of fault indicators for simplified and efficient troubleshooting
9. Undertake load flow studies at normal operating conditions and for contingency analysis at N-1 condition showing the overloaded element(s), if any
10. Complete facilities studies

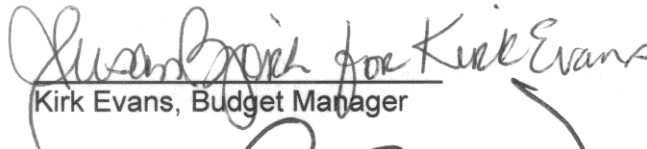
APPROVED: _____

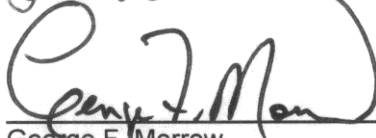
Blair King, City Manager

The performance of this comprehensive and detailed power systems analysis of the City's electrical infrastructure will be advantageous in minimizing nuisance circuit tripping and restoration times. It will help EUD Staff to troubleshoot and locate probable faulted lines and equipment safely and efficiently in the shortest possible time. Above all, it will enhance the reliability and security of electrical operation thereby providing better electric service to the City's customers. Therefore, staff is requesting City Council approval of the request for proposal for power systems studies on the existing 12kV electric systems, four (4) substations, and the 60kV transmission lines.

FISCAL IMPACT: Engineering estimate is \$50,000.

FUNDING AVAILABLE: Account No. 160652.7323 (Substation Maintenance)


Kirk Evans, Budget Manager


George F. Morrow
Electric Utility Director

PREPARED BY Demy Bucaneg, Jr., P.E., Assistant Electric Utility Director

GFM/DB/lst

Attachments (1)

CITY COUNCIL

JOANNE MOUNCE, Mayor
LARRY D. HANSEN,
Mayor Pro Tempore
SUSAN HITCHCOCK
PHIL KATZAKIAN
BOB JOHNSON

CITY OF LODI

ELECTRIC UTILITY DEPARTMENT

GEORGE F. MORROW, DIRECTOR

1331 S HAM LANE

LODI, CALIFORNIA 95242-3995

(209) 333-6762

FAX (209) 333-6839

BLAIR KING, City Manager

RANDI JOHL, City Clerk

D. STEPHEN SCHWABAUER,
City Attorney

July 6, 2008

To Prospective Bidders

Subject: **Request for Proposal (RFP) for power systems studies on the existing 12kV electric distribution systems, four (4) substations, and 60kV transmission lines**

The City of Lodi hereby invites sealed proposals to provide engineering services to perform power systems studies on the existing 12kV electric distribution systems, four (4) substations, and 60kV transmission lines. Each bid shall be in accordance with this notice and specifications on file and available from the Engineering & Operations Division, City of Lodi Electric Utility Department, 1331 South Ham Lane, Lodi, California 95242, (209) 333-6762. No bid will be considered unless it is submitted on a format according to the 'ORGANIZATION OF PROPOSAL' Section of this RFP document.

Sealed proposals shall be delivered to the Budget Manager at the City Hall Annex, 300 West Pine Street, Lodi, CA 95240 (P.O. Box 3006, Lodi, CA 95241-1910) on or before

September 17, 2008, at 11:00 a.m.

At that date and hour said sealed proposals will be publicly opened and read in the Public Works Conference Room, City Hall, 221 West Pine Street, Lodi, California. Bidders or their authorized representatives are invited to be present.

Please submit detailed proposal and your standard service agreement for review and approval. If there are any questions regarding this request for proposal, you may contact me at (209) 333-6811, by email at dbucaneg@lodielectric.com or Weldat Haile of my Staff at (209) 333-6763, by email at whaile@lodielectric.com. Arrangement for site inspection may be made by calling Mr. Haile at least 24 hours in advance of planned inspection.

Demetrio S. Bucaneg, Jr. -PE
Assistant Electric Utility Director
Engineering & Operations Division
City of Lodi Electric Utility Department

Request for Proposal

for

POWER SYSTEMS STUDIES

The Engineering & Operations Division, City of Lodi Electric Utility Department is inviting qualified consulting firms to provide engineering services to perform power systems studies on the existing 12kV electric distribution systems, four (4) substations, and 60kV transmission lines. The following Request for Proposals (RFP) outlines the background, scope of work and proposal requirements for the services.

BACKGROUND

Growth within the City between year 2001 and 2006 increased significantly the electrical loads being served by the existing electric distribution system. The summer peak load in 2001 was approximately 120MW. In 2006, load crested to a new high of approximately 148MW.

In previous years of operations, the City's electric distribution system experienced a number of nuisance device trippings of unknown causes, prolonged outages due to several protective devices being activated at the same time at different phase circuits, and widespread power shutdowns caused by main protective relays operating at the substation facility. Troubleshooting of faulted lines proved to be difficult and needed more time to investigate before power could be restored. Some overhead capacitor banks were switched-off and left in place and a number of capacitor banks were removed from service. Others were switched-on continuously and had a number of faulted capacitor banks.

Standard power utility practices dictate the performance of comprehensive and detailed power system analyses and evaluation of the existing facilities/systems regularly (every two to three years). This is to verify and confirm that existing limits, as well as various electric distribution, substation and transmission components, are within the safe operational limits to serve electrical loads. Continued checks and adjustments enhance the reliability and the security of continuous power service to the customer and minimize prolonged power outages. The last comprehensive power system study for the City's power grid was conducted in 2001. It needs to be updated.

SCOPE OF WORK

The request for proposal will cover the power system studies of the City's existing 12kV electric distribution system, four (4) substation facilities (Henning, Industrial, Killelea and McLane), and the 60kV transmission lines including the interconnection with PG&E. This task will be executed using ASPEN Software. The scope of work for this engineering services to provide comprehensive power systems studies will encompass, but not be limited to, the following task areas:

1. Database creation, setup, configuration, parameter and data entries, review of existing E&O operating procedures and guidelines
2. Short circuit studies for at least the three-phase fault and line-to-ground fault

3. Protective relay coordination from the 60kV to the smallest fuse installed in both overhead and underground distribution system at the 480-volt system
4. Update protective device library to include all devices installed and being used throughout the City's power grid
5. Establish and standardize relay settings, fuse sizes, circuit breaker sizes and reclosers including 12kV reclosing strategy at different fault conditions
6. Voltage drop study, voltage profile and voltage support analysis for each of the more heavily loaded 12kV feeders and substation transformers
7. Evaluate the effectiveness of existing line capacitors and confirm the correct capacitor placement in the electric distribution system
8. Determine strategic location and placement of fault indicators for simplified and efficient troubleshooting
9. Undertake load flow studies at normal operating conditions and for contingency analysis at N-1 condition showing the overloaded element(s), if any
10. Complete facilities studies and identify the limiting elements
11. Coordination with PG&E for the calculation, coordination and setting of protective relays on the 60kV lines feeding the City's Industrial Substation
12. Coordinate with NCPA and PG&E to calculate, coordinate and set the undervoltage and underfrequency load shedding relays (UVLS & UFLS) in compliance with the current NERC reliability standards
13. Submittal of three (3) sets of complete and detailed studies, relay settings with corresponding diagrams and final reports in hard and electronic copies
14. Submittal of updated databases, library of protective devices (including fuses being used in the City's electric distribution system), all bases cases, references and data used in the above studies

ORGANIZATION OF PROPOSAL

Prospective Bidders are furnished with one request for proposal (RFP) document. Proposals shall follow the following format:

- A. Service approach narrative – This section should demonstrate an understanding of the task at hand and include a narrative describing how the Bidder would go about the work. This section will also include the methodologies and assumptions in performing the power systems and facilities studies.
- B. Project team – Describe the personnel who will carry out services, and their respective responsibilities.
- C. Qualifications – Provide a narrative describing how the team as a whole meets the qualifications for the services. Include a list of prior relevant projects, power utilities, and contact persons where ASPEN Software was used.
- D. Submittals & Report – This section should summarize the submittals, final report structure, attachments, figures, data, tables, drawings, etc. It should include also schedule of preliminary and final submittals and the required number of copies and the respective

formats of each particular submittal.

- E. Bid Proposal & Project Schedule – Provide the proposed project schedule to commence within 15 days after receipt of 'Notice to Proceed' from the City. It should include in detail the proposed bid cost in performing the tasks as described in the 'Scope of Work', and a summarized engineering/consulting fee structure and other surcharges, and/or details as appropriate. Note: Refer also to the 'Additional Terms And Conditions' of this request for proposal.
- F. Signatures - The proposal must be signed with the full name and address of the bidder, by an authorized representative of the company with all the information below.
 - i. Name of company
 - ii. Address
 - iii. Authorized signature
 - iv. Name
 - v. Title
 - vi. Telephone No.
 - vii. Fax No.
 - viii. Date
- G. Note - The City of Lodi reserves the right to reject any or all bids, to waive any informality in any bid, to accept other than the lowest bid, or not to award the bid.

PROPOSAL SUBMISSION

- A. The Budget Manager will receive sealed proposals at the following address until
11:00 am, Wednesday, September 17, 2008.
- B. Proposals shall be submitted under sealed cover, plainly marked

Proposal – Power Systems Studies Bid Opening - September 17, 2008.

Bids, which are not properly identified, may be disregarded. Bids, which are not received by 11:00am, Wednesday, September 17, 2008 will be returned to the bidder unopened.

Bids shall be submitted

To:	Lodi City Council	
	c/o –Budget Manager	
	<u>(If delivered by FedEx, UPS, or courier):</u>	<u>(If delivered by mail):</u>
	300 West Pine Street	P O Box 3006
	Lodi CA 95240	Lodi CA 95241-1910

BID OPENING

- A. At 11:00 A.M., Wednesday, September 17, 2008, or as soon as possible thereafter, in the Public Works Conference Room, City Hall, 221 West Pine Street, Lodi, California, proposals will be publicly opened and read. Bidders or their authorized representatives are invited to be present.

SELECTION PROCESS

Complete proposals will be evaluated based on the information submitted. This will permit a recommendation to the City Council for contract award. The following equally weighted criteria will be used to evaluate submitted proposals:

- A. The likelihood of the proposed approach to produce the desired results.
- B. Qualifications of the Bidder.
- C. The value offered by the Bidder's price in relation to the proposed approach.

REJECTION OF PROPOSALS

The City of Lodi reserves the right to reject any and all proposals and to solicit new proposals with modified terms and conditions. It also reserves the right to waive any informality in connection with the proposals.

CONTRACT AWARD

- 1. The City of Lodi reserves the right to reject any or all bids, to waive any informality in any bid, to accept other than the lowest bid, or not to award the bid.
- 2. If there will be a tie in the submitted proposals, the tie will be broken by a coin toss, conducted by the Budget Manager. Tie bidders will be notified and may be present.
- 3. In all circumstances, including receipt of alternative bids, the City Council reserves the right to select the bid most advantageous to the City.
- 4. The award, if made, will be made within forty five (45) days after the opening of the bids.

GENERAL PROVISIONS

5-409 Responsibility for Damage The City of Lodi, its elected and appointed boards, commissions, officers, agents and employees shall not accept responsibility for any loss or damages that occur during the scope of work to the work or any part thereof; or for any material or equipment used in performing the work; or for injury or damage to any person or persons, either work personnel or the public; for damage to adjoining property arising from or related to Contractor's negligence or willful misconduct during the progress of the work or any time before final acceptance. The Contractor shall indemnify and save harmless the City of Lodi, its elected and appointed boards, commissions, officers, agents and employees from any suits, claims or actions brought by any person or persons for or on account of any injuries or damages sustained or arising out of Contractor's negligent acts, errors or omissions in the performance of the work or in consequence thereof. The City of Lodi may retain as much of the money due the Contractor as shall be considered necessary until disposition has been made of such suits or claims for damages as aforesaid.

5-413 Insurance Requirements for Contractor The Contractor shall provide proof of insurance to be maintained during the life of this contract as listed under General Liability and Automobile Liability coverage listed below. These insurance policies shall protect the Contractor and any subcontractor performing work covered by this contract from claims for damages for

personal injury, including accidental death, as well as from claims for property damages, which may arise from Contractor's operations under this contract, whether such operations be by Contractor or by any subcontractor or by anyone directly or indirectly employed by either of them, and the amount of such insurance shall be as follows:

- | | |
|---|--|
| 1. <u>COMMERCIAL GENERAL LIABILITY</u>

Per Occurrence
\$1,000,000 Property Damage

Personal & Adv Injury
\$2,000,000 General Aggregate | 2. <u>COMPREHENSIVE AUTOMOBILE LIABILITY</u>

\$1,000,000 Combined Single Limits |
|---|--|

NOTE: Contractor agrees and stipulates that any insurance coverage provided to the City of Lodi shall provide for a claims period following termination of coverage which is at least consistent with the claims period or statutes of limitations found in the California Tort Claims Act (California Government Code Section§ 810 et seq.).

A copy of the certificate of insurance with the following endorsements shall be furnished to the City of Lodi:

(a) Additional Named Insured Endorsement with Primary Wording

Such insurance as is afforded by this policy shall also apply to the City of Lodi, its elected and appointed Boards, Commissions, Officers, Agents and Employees as additional named insured, insofar as work performed by the insured under written contract with the City of Lodi.

(This endorsement shall be on a form furnished to the City of Lodi and shall be included with Contractor's policies.)

Wording: Such insurance as is afforded by the endorsement for the Additional Insureds shall apply as primary insurance. Any other insurance maintained by the City of Lodi or its officers and employees shall be excess only and not contributing with the insurance afforded by this endorsement.

(c) Severability of Interest Clause

The term "insured" is used severally and not collectively, but the inclusion herein of more than one insured shall not operate to increase the limit of the company's liability.

(d) Notice of Cancellation or Change in Coverage Endorsement

This policy may not be canceled nor the coverage reduced by the company without 30 days' prior written notice of such cancellation or reduction in coverage to the City Attorney, City of Lodi, P.O. Box 3006, Lodi, CA 95241.

(e) Contractor agrees and stipulates that any insurance coverage provided to the City of Lodi shall provide for a claims period following termination of coverage which is at least consistent with the claims period or statutes of limitations found in the California Tort Claims Act (California Government Code Section 810 et seq.).

"Claims made" coverage requiring the insureds to give notice of any potential liability during a time period shorter than that found in the Tort Claims Act shall be unacceptable.

5-414 Workers' Compensation Insurance The Contractor shall provide proof of and maintain during the life of this contract, Worker's Compensation Insurance for all Contractor's employees employed at the site of the project and, if any work is Subcontracted, Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the

Contractor. In case any class of employees engaged in hazardous work under this contract at the site of the project is not protected under the Worker's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide insurance for the protection of said employees. This policy may not be canceled nor the coverage reduced by the company without 30 days' prior written notice of such cancellation or reduction in coverage to the City Attorney, City of Lodi, P.O. Box 3006, Lodi, CA 95241.

ADDITIONAL TERMS AND CONDITIONS

1. The successful bidder will schedule within 15 days from receipt of 'Notice to Proceed' a coordination meeting between the successful bidder and the City of Lodi to start the project. Meeting will be held at the E&O Conference Room, 1331 S. Ham Lane, Lodi, CA 95242. Time and duration of meeting will be established coordinated by the successful bidder.
2. The successful brokerage company shall indemnify and hold harmless the City of Lodi, its officers and employees, from all suits or actions of every name, kind and description brought for or on account of any injuries, damages, and/or costs incurred or sustained by any person or persons, by or from the bidder, in the use or inability to use, sell or dispose of this property. Submission of the bid constitutes bidder's agreement to this and all other sections of this request for proposal.
3. All information, data, diagrams, schematics, equipment and device settings and ratings, object/programming codes, maps, operational/engineering parameters, guidelines and procedures are proprietary to the City of Lodi and shall be kept strictly confidential and shall not be shared and disclosed without any written authorization from the City of Lodi. All of these shall be returned and/or submitted to the City of Lodi after the completion of this project.
4. If the new relay settings will result to nuisance trippings/outages and miscoordinated operation of protective devices, the successful bidder shall be responsible in evaluating the events and mitigate the issue/s in a timely and effective manner consistent with the power utility standards and practices.
5. It is agreed that in the event of any litigation arising hereunder, the bidder at the request of the City of Lodi shall submit to the jurisdiction of any court of competent jurisdiction within the County of San Joaquin, State of California, and will comply with all, requirements necessary to give such court jurisdiction, and that all matters arising hereunder shall be determined in accordance with the law and practice of such court. It is further agreed that service of process in any such litigation may be made in the manner provided for in said code for service upon a person outside of the State of California.